

## **Will County Land Use Department Brownfield Prioritization for Solar Energy Development Appendix 3: Potential Solar Energy Developers**

### **Focus on Solar Energy Developers**

The Chicago Metropolitan Agency for Planning (CMAP) partnered with the Will County Land Use Department to develop an inventory of brownfield sites that could be developed for renewable energy production as part of CMAP's Local Technical Assistance program. The goal of the project is to inventory existing brownfield sites in the incorporated and unincorporated areas of Will County in order to prioritize the sites that have the greatest potential to be used for renewable energy production. As part of this process, CMAP researched existing renewable energy projects and created a list of developers with experience redeveloping brownfield sites for renewable energy production. The project team's focus is solar energy development, rather than the development of other renewable power sources, such as wind power, hydropower, biofuels and geothermal energy. Solar power is a widely available resource in Will County that can be developed on brownfield sites with little remediation and can coexist with the County's wide variety of land uses.

### **Assessing Solar Energy Developers**

Solar energy developers were identified by researching many of the leading agencies and associations that work with solar energy nationwide. In addition to the US Environmental Protection Agency's (USEPA) RE-Powering America website (<http://www.epa.gov/oswercpa/>) and NREL's Solar Prospector (<http://maps.nrel.gov/prospector>), the solar energy developers discussed in this document were culled from project descriptions by the American Planning Association (APA) and the Solar Energy Industries Association (SEIA). The list of solar energy developers includes more than two dozen firms that were considered "more appropriate" or "less appropriate" for this project. The list provides the name of the developers, the location of their offices, examples of recent projects, contact information and links to the company's website. Each firm deemed more appropriate for this project was given a grade of one (lowest) to five (highest) that rates the firms that are most suitable for this project. The firms with the highest grades are those with experience working with local governments, redeveloping brownfield sites, working on projects with a range of sizes, and those with local offices or solar projects located in the Midwest. Less information was provided for companies that were found to be less appropriate, but these entries were included so as not to duplicate work as Will County staff investigates solar energy developers in the future.

## ***More Appropriate Solar Energy Developers***

### **Arcstar Energy**

- About: Develops commercial, industrial and brownfield solar sites.
  - Specializes in the following brownfields types: landfills, mines and toxic industrial sites.
  - Central strategy has been the acquisition and development of municipal, community and industrial solar projects built on capped landfills, spent aggregate pits and other industrial brownfield applications.
  - Brownfield development team is based in Toronto, and has been working with municipal and industrial brownfield site owners and operators for many years and has been developing solar fields on brownfields since 2008.
- Office Locations: New York, NY; Miami, FL; Toronto, ON; San Jose, CA.
  - Brownfields Team: Based in Toronto.
- Projects: Have over 40 MW of solar brownfield production using both rooftop and ground mounted systems, but no specific projects are listed on the website.
- Solutions:
  - Purchase Power Agreement (PPA): Allows County to purchase energy produced by an ArcStar owned system on their premises. PPAs allow users to lock in current energy rates and removes historical capital barriers associated with solar-powered solutions.
  - Managed System Acquisition: Allows County to invest directly in a turn-key solar solution that ArcStar will install and maintain. In addition, they process all incentives and rebates so the County can take full advantage of benefits, quickly and easily.
- [Contact](#).
- Grade: 4 of 5 – Solid, but lack specific projects.

### **Axio Power**

- About: The Axio Power team has managed PV projects through all stages of development, from site control and permitting, to power sale negotiations, financing, construction, and operations. Our team has developed several hundred megawatts of renewable energy projects. This experience helps Axio to navigate regulatory markets, successfully identify opportunities, finance projects, and get them built. Axio Power has experience converting contaminated brownfield and landfill sites into productive renewable energy facilities. Axio works with a variety of customers, including government entities. Axio also develops wind energy projects. The news section of their website has not been updated since March 2011.
- Office Locations: Costa Mesa, CA; Charlottesville, VA; New York, NY; Erie, PA; Kingston, ON.
- Projects:
  - Landfills
    - Westfield, MA: 2 MW; March 2011.
    - Pittsfield, MA: 2 MW; November 2010.
    - Greenfield, MA: 2 MW, June 2010.
  - Cascade Solar Park, Sunfair, CA: 18.5 MW, ground-mounted; in progress
  - Fetzner Vineyards, Hopland, CA: 901 kW; roof-mounted; November 2006
  - Fort Carson, Colorado Springs, CO: 2 MW; ground-mounted; January 2008
  - Gap Distribution Center, Fresno, CA: 1.1 MW; ground-mounted; January 2008
- [Contact](#).
- Grade 4 of 5 – Received from P. Haddix (Solar Foundation) with several landfill site projects.

### Borrego Solar

- About: Borrego Solar has thirty years of industry experience and currently handles every aspect of solar power installations, including financing, technology evaluation, engineering and design, construction, monitoring, and ongoing maintenance and support
- Office Location: San Diego, CA; Oakland, CA; Austin, TX; Washington, DC; Boston, MA.
- Projects: 24 examples of projects with local governments at a range of sizes and capacities, both on ground and on building.
  - City of Ridgecrest, CA: 496 KW. Funding: PPA. Type: Ground mount.
  - Santa Clara County, CA: 1,147 KW. Funding: PPA. Type: Roof installation in covered surface parking lot.
  - Massachusetts Water Resources Authority: 100 KW. Funding: Clean renewable energy bonds. Type: Roof installation.
- [Contact](#).
- Grade: 4 of 5 – Solid, but no projects in the Midwest. Received from P. Haddix (Solar Foundation).

### Brightfields Development LLC

- About: Develops brownfield solar sites for municipalities and private companies.
- Office Location: Wellesley, MA
- Projects: Twelve solar power projects throughout the US.
  - East St. Louis, IL: Size: 220 acres. Type: Superfund site. Remediation Cost: \$24 million. Solar Installation: \$65 million. Production: 20 MW.
- Partner: [Renova Partners](#): Investment banking firm headquartered in Atlanta, GA that assumes risk for brownfields projects.
- Benefits to Local Government: Company highlights the municipal benefits of solar solutions, such as creating sustainable economic assets, repurposing dormant land, generating clean energy and demonstrating environmental commitment.
- [Contact](#).
- Grade: 5 of 5 – Solid. Received from P. Haddix (Solar Foundation).

### EDF Renewable Energy

- About: Has over 25 years of experience developing, maintaining and operating wind and solar projects. EDF Renewable Energy is the US subsidiary of France's EDF Energies Nouvelles, the renewable energy arm of EDF Group.
- Office Locations: US: San Diego, CA; International: Paris, France.
  - Additional development offices in Denver, Minneapolis, Toronto and other locations.
- Projects: Have fourteen solar projects in the US and Canada. In the US nearly all of their solar projects are in California and New Jersey, ranging in size from 0.14 MW to 150 MW.
- Solutions: PPA and direct sale to customer
- [Contact](#): Central Region: Minneapolis, MN (Tel: 612.746.0770).
- Grade: 3 of 5 – Project size is appropriate, but more focus on the east and west coasts.

### Iberdrola Renewables, LLC (US)

- About: Develops, builds and operates wind, solar, biomass and thermal projects.
- Office Locations: Portland, OR. (International: Madrid, Spain.)
- Projects: Mostly wind, but has two solar projects in Arizona (20 MW) and Colorado (30 MW) that started in 2010 and has more projects underway.
- [Contacts](#): Wind and Solar Development Contacts for projects in Illinois.
  - Jeff Reinkemeyer: jreinkemeyer@IberdrolaREN.com, 262-593-2764.

- Jesse Bermel: jbermel@lberdrolaREN.com, 503-724-2483.
- Grade: 2 of 5 – Company is intimidatingly large, and has more of a wind focus.

### Invenenergy

- About: Develops, owns, and operates power generation facilities in North America and Europe. Experienced in solar, wind and natural gas projects. Expertise includes development, permitting, transmission, interconnection, marketing, finance, engineering, construction, operations and maintenance.
- Office Location: Chicago, IL
- Projects: Website provides many wind projects, but has only three solar projects.
  - Grand Ridge Solar, LaSalle County, IL. PV solar farm. Operations began in 2012. Production: 20 MW.
  - Sandringham & Woodville, Ontario, Canada. PV solar farm. Operations began in 2013. Production: 10 MW.
- [Contact](#).
- Grade: 3 of 5 – More wind focus, but has office located in Chicago.

### Juwi Solar Inc.

- About: Single source developer that provides multiple services including planning, engineering, procurement and construction.
- Office Locations: US: Boulder, CO; International: Worrstadt, Germany (near Frankfurt).
- Projects: Nine solar projects in the US, but only one in the Midwest. Focus on projects 1 MW, or larger. Generally works with utilities, investors, commercial and industrial clients.
  - Wyandot Solar: Upper Sandusky, OH: 12 MW, Online: May 2010, Via: PPA.
- [Contact](#).
- Grade: 2 of 5 – Does not focus on local government partnerships.

### Mainstream Renewable Power

- About: Develops and builds wind and solar plants on land and at sea. Expertise is taking projects through all the stages of development, such as securing land, wind analysis, GIS, environmental studies, consenting, procurement, and financing.
- Office Locations: US: Chicago. International: Dublin, Ireland.
- Projects: One solar and three wind projects in the US
  - Dandelion Solar: Dixieland, CA; 80 MW
- [Contact](#).
- Grade: 1 of 5 – Only one solar project in the US, but has office located in Chicago.

### NextEra Energy Resources

- About: Expertise includes wholesale and retail electricity, project development and construction. Operates mostly wind projects (57%), as well as natural gas (23%), nuclear (15%) and solar projects (1%).
- Office Locations: US: Juno Beach, FL; Canada: Toronto, ON
- Projects: Only has three solar projects in the US.
  - Paradise, NJ: 5 MW, began operation in 2010 on 160 acres of private land.
  - Hatch, NM: 5 MW, began operation in 2013 on 39 acres in the Village's industrial park using a concentrated photovoltaic system.
  - Solar Electric Generating Systems, CA: 310 MW over 1,500 acres among seven facilities.
- [Contact](#).

- Grade: 1 of 5 – Solar production is only one percent of the company’s business.

### Recurrent Energy

- About: Solar project developer and generating company providing clean electricity to utilities and large energy buyers. The company focuses on distributed-scale projects, 5 MW to 20 MW solar generating plants that are connected to existing utility distribution networks in areas of high demand.
- Office Locations: San Francisco, CA; Palatine, IL; Toronto, ON.
- Projects: Has completed seven projects and has two others under construction, ranging from 2MW to 220 MW. The projects are located throughout California and in Arizona and the Northeast, as well as Canada and Spain. Seem to have some experience with local government.
- [Contact](#).
- Grade: 1 of 5 – Does not have a lot of solar experience, but has a Chicago-area office.

### SPG Solar

- About: Since 2001, SPG Solar has developed and installed over 1,500 solar power systems. SPG takes clients through the solar project lifecycle, including site analysis, design and engineering, solar financing, site preparation and installation, and operations and maintenance. Prominently touts its use of SunSeeker solar trackers for all of its projects.
- Office Location: Petaluma, CA.
- Projects: Has 35 examples of projects with government, institutional and commercial clients.
  - Sonoma County, CA: 708 KW. Funding: PPA. Type: Ground mount on County land.
  - Kern County, CA: 2.7 MW. Type: Ground and roof mounts on County land.
  - Tucson, AZ: 3.3 MW. Type: Roof mount on City facilities.
- [Contact](#).
- Grade: 3 of 5 – Good qualification, but company has a west coast focus.

### SunDurance Energy

- About: SunDurance Energy develops, designs, builds and operates megawatt-scale solar power solutions for commercial and industrial, federal government and utility-scale markets. SunDurance makes it easier to adopt new energy technologies by taking over most of the major responsibilities for the customer and reducing them to a simple monthly payment based on electricity usage. Subsidiary of The Conti Group, a leader in infrastructure development, engineering and construction, power, water, environmental remediation, homeland security and renewable energy.
- Office Location: Edison, NJ.
- Projects: All of SunDurance’s projects are located in NJ.
  - Apple Orchard: North Brunswick, NJ; 6 MW; ground-mount.
  - Morris County: 16 Municipal Sites; 3 MW; PPA.
  - New Jersey Meadowlands Commission: Kearney, NJ; 3 MW; landfill site
  - Rutgers University: Piscataway, NJ; 8 MW; parking canopy
- [Contact](#).
- Grade: 2 of 5 – All projects located in New Jersey. Received from P. Haddix (Solar Foundation).

### SunEdison

- About: Develops, finances, operates and monitors solar energy solutions worldwide, ranging from some of the world’s largest solar deployments to residential rooftops. Focuses on analysis, design, construction, certification, operation, monitoring and maintenance. SunEdison is a

subsidiary of MEMC Electronic Materials, a polysilicon and silicon wafer manufacturing company, the foundation upon which most solar cells and semiconductor devices are built.

- Office Locations: US: Belmont, CA; St. Peters, MO (Suburban St. Louis)
- Projects: Only four projects listed for government clients, three in California, one in Colorado.
  - Rifle, CO: Two projects on separate municipal sites using a 20 year PPA. Production: 2.3 MW (total).
  - San Diego, CA: Solar on roof of municipal sites. Commercial operation slated to begin in 2013. Production: 50 MW.
  - California Department of General Services: Chuckawalla Prison. Production: 1.2 MW.
  - California State University Chico: Roof-mounted panels. Production: 346 KW.
- [Contact.](#)
- Grade: 2 of 5 – Not many solar projects, and those that they have seem small and unique.

### SunPower

- About: Largest residential and commercial solar installer based in the US. Established in the 1980s, and has installed over 120 large scale systems.
- Office Locations: San Jose, CA; Austin, TX; as well as California, Oregon, NJ, Europe, Asia, Africa and Middle East.
- Projects: Includes a solar solutions for local government section. Most projects in California, New York and New Jersey.
  - Exelon City Solar: Chicago, IL. 10 MW project on a 41 acre site.
  - Chico, Fresno, Oakland, Richmond, Vallejo; Alameda County (3.1 MW, 2007)
  - Contra Costa County (189 KW, 2002)
  - Lake County & Sonoma County (2.1 MW, 2008).
- [Contact.](#)
- Grade: 3 of 5 – Good experience with municipal and county projects, but not in the Midwest. Received from P. Haddix (Solar Foundation).

## ***Less Appropriate Solar Energy Developers***

### **3 Phases Energy Services**

- About: Company works with electrical contractors to build solar projects. Even though this company was suggested by D. Morley of APA, there is very little information about the company and its services on their website, and the news section has not been updated in six years.
- Office Location: Los Angeles, CA.

### **Acciona Energy**

- About: Develops wind power, concentrated solar power (CSP), photovoltaic (PV), biomass and hydraulic power.
- Office Locations: US: Chicago, IL; International: Madrid, Spain.
- Projects: Two CSP projects in Nevada and Arizona. Three PV projects in Spain and South Africa.

### **Advanced Solar Products**

- About: Install PV panels for commercial, residential, and utility projects. Handle installation, design and construction, not development.
- Office Locations: Flemington, NJ and Pelham, MA.
- Projects: Have installed dozens of solar projects. The vast majority of them are in New Jersey, though they have some in Massachusetts and Pennsylvania and elsewhere.

### **BNB Renewable Energy Holdings**

- About: Wind and Solar. Established in 2004. Seem more interested in working with corporations to provide energy generation as part of their corporate responsibility and strategic energy goals.
- Office Locations: New York, NY; Exton, PA; Austin, TX
- Projects: Two solar projects in development: Napoleon, OH on Campbell's Soup Factory land (9.7 MW) and two huge sites in Pecos County and Borden County, TX (100MW & 500 MW).

### **Convergence Energy**

- About: Small installation firm concentrating on small projects.
- Office Locations: Lake Geneva, WI; Telluride, CO; Austin, TX
- Projects: Have one solar farm in Delavan, WI, but mostly work on commercial and residential installations. Do not appear to have worked with municipalities. All projects appear to be less than 1 MW in energy production.

### **Exelon Solar**

- About: Owns and operates two solar facilities providing funding and operation. Does not focus on development.
- Office Location: Kennet Square, PA (Outside Philadelphia)
- Projects: Exelon City Solar, developed by SunPower, in Chicago, IL as the largest urban solar installation in the US (10 MW); and Solar Ranch One near Lancaster, CA (230 MW)

### **groSolar**

- About: Provides services for commercial and utility customers, such as engineering, procurement, construction, design, installation, operations and maintenance. Services do not include development. Expertise in solar on brownfield sites, municipal solid waste landfills, open water and wastewater treatment tanks, Superfund sites, and landfill caps.
- Office Locations: White River Junction, VT; Columbia, MD; Boston, MA; Fontana, CA; Pittson, PA.



- Projects: Mostly located in the northeast, including solar farms and large projects on building rooftops. Projects range from 105 kW and 6 MW.

#### Infrastructure and Energy Alternatives (IEA)

- About: Company that does management and construction of renewable energy projects (solar, wind, biomass) and other power generation projects (gas, biomass) in addition to coordinating other civil infrastructure, wastewater treatment centers and other industrial projects. IEA has installed over 60 MW of utility scale solar projects using a variety of technologies.
- Office Locations: Westchester, IL; Fargo, ND.
- Projects: Collaborated on solar farm projects with Invenergy, SunEdison, and EDF Renewables, among others.

#### Mainstay Energy

- About: Provides feasibility studies and analysis of renewable energy credits with various renewable energy companies.
- Office Location: Chicago
- Projects: Currently working on Chicago-Calumet brownfield, has some past projects listed but includes very few details and most past projects seem to be more oriented towards feasibility studies or efforts to enact renewable energy credits.

#### Martifer USA

- About: Focus on design, engineering, production, installation, maintenance and financing. Provides turnkey photovoltaic solutions adapted to property owners, businesses and municipalities at commercial and industrial scale.
- Office Locations: USA: Los Angeles, CA; International: Oliveira de Frades, Portugal.
- Projects: Focus on government solar projects with work in Cerritos, Pasadena and Thousand Oaks, CA, and Aurora, CO. Has worked in eleven states.

#### Meister Consultants Group

- About: Sustainability consulting firm with expertise in renewable energy, market analysis, policy research and energy strategies.
- Office Location: Boston, MA.
- Projects: Only relevant project listed is the City of New Bedford, MA, where they coordinated solar procurement. Completed solar surveys for brownfield and building sites, documented drafting, bid review, and power purchase agreements.

#### NRG Solar

- About: Designs solar solutions for municipalities, utilities, college campuses, school districts, hospitals, and sports stadiums. Seems like the focus is football stadiums and offshore projects. Formerly known as SPP Inc. (Solar Power Partners).
- Office Locations: Larkspur, CA; Carlsbad, CA; Phoenix, AZ; Princeton, NJ
- Projects: Most of their projects are in the northeast and in California with an emphasis on solar installation on stadiums. Have some utility projects, but mostly commercial projects for producing energy on-site.

#### Rivermoor Energy

- About: Focusing exclusively on projects in New England, Rivermoor Energy is a development and investment company specializing in energy solutions for commercial, government, institutional



and utility clients. Also provides an energy storage service to support utility initiatives and strengthen electrical infrastructure.

- Office Location: Newton, MA.

#### SoCore Energy

- About: Solar portfolio development for commercial rooftop installations focused exclusively on the solar energy needs of multisite retailers, REITs and industrial clients.
- Office Location: Chicago, IL
- Projects: Received media publicity in 2013 for plans to install solar panels on 200 Walgreens stores nationwide.

#### Solar Reserve

- About: Company makes a thermal energy storage technology utilizing molten salt in a tower configuration. Develops concentrated solar power (CSP) projects in addition to photovoltaic (PV) projects.
- Office Locations: Santa Monica, CA; Madrid, Spain; Sandton, South Africa.
- Projects: One CSP project in Nevada, three PV projects in South Africa.

#### SunRise Energy Ventures

- About: Develops, owns and operates commercial to industrial scale solar photovoltaic (PV) equipment. Can develop projects that return energy to the grid or use energy for on-site construction.
- Office Location: Minnetonka, MN
- Projects: Have projects in North Carolina and New Mexico, but few project details on company website other than name and total energy provided for each project: Dexter, NM (100 KW, 200 KW, 500 KW), Roswell, NM (200 KW). No detail provided on projects in North Carolina.